

Institutional repositories: contributing to institutional knowledge management and the global research commons

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Once a repository starts to bed down in an institutional culture it can seem a hard task to respond to the growing demands made of the service. Any repository manager will want to develop repository services in a sustainable way that guarantees continued funding and supports the core mission of the institution. This paper will explore the growing range of demands being made of institutional repository services. Are we in danger of becoming “jack of all trades and master of none”, or standing our ground to support a specific goal to the exclusion of others? Is there a way to integrate the repository into the business processes of the institution and effectively contribute to a diverse range of internal and external activity?

Multiple strategies, multiple processes

The primary aim of the repository at the University of Southampton is to “provide a permanent record of the research output of the University and maximise the visibility, usage and impact of this research through global access”.¹ This is firmly rooted in the global knowledge commons and the institutional benefits that accrue from such collective participation e.g. visibility contributing to prestige, greater citations to research. However the bridging funding that embedded the repository into the mainstream finances was dependent on use of the repository to support national research assessment activity. This will always include evolving information which institutions will not wish to place in the public domain; because it is work in progress, or information which pertains to individual members of staff and subject to data protection or because it is deemed business-critical. Research assessments are ultimately competitive, with institutions looking to maximize their slice of the pie or prestige through rankings. Thus quickly the repository was called on to deliver effective services to meet different requirements. As a consequence the repository is part of a complex model of business processes, quality assurance and added-value services. We are now at a critical juncture. Current developments have been user-led and respond to current strategies. These developments are both technical and social and have included:

- publication lists for personal home pages via the institutional content management system
- upgrade link from LDAP to a direct link to the Human Resources database to improve the link to legacy staff identifiers and allow for whole career pathway progression from undergraduate to staff member
- desk-side coaching for staff on OA and the use of the repository
- embedded training in research postgraduate training programmes on OA and support for producing the mandated e-thesis
- develop ability to select outputs for research assessments, store measures of esteem, run publication reports for defined groups

¹ University of Southampton Research Repository Policies, <http://eprints.soton.ac.uk/repositorypolicy.html> [accessed on 3 February, 2009]

- develop the presentation and usability of non-textual material through light-box functionality.

There is no doubt that these improvements are useful and meet the needs of the institution. However, as the service demands grow and become more complex, it is now time to re-assess the strategic and operational environment of the institution and look to mature the way that the repository contributes. A helpful way of grounding this assessment is to look at the next stage in terms of knowledge management.

Knowledge management

Universities are of course knowledge-intensive institutions and researchers are key knowledge workers with high levels of theoretical knowledge and the social capital of research networks. Researchers are thus prone to poaching by other institutions and the shared set of values that build communities may be stronger at discipline level than institutional level. Nevertheless there can be strong institution-wide business processes which can be quite resource intensive e.g. ethics framework, quality assurance, accounting and finance. The tension between the small trusted group innovating to create new knowledge and the large scale network facilitating broader knowledge exchange and the knowledge context is at the heart of research activity. As grants become more collaborative we could be reaching a tipping-point where the perceived “lone researcher” model of activity is no longer sustainable. Universities will be seeking to actively support larger scale collaborative activities, both within the institution and with global partners. Currently culturally and in some ways technically, despite large scale developments like grid-computing, universities are trying to deliver greater collaboration from a “lone researcher” base. Repositories are well placed to play a key strategic role in delivering the shift to a cultural and technical environment that supports large-scale collaboration.

Communities of practice

A key role for the future development of repositories is in the support of communities of practice where knowledge is shared and created in a trusted environment. This can be the development of new interdisciplinary research communities within the institution, or international collaborations which could include private sector partners. Open access helps expose research outside the University environment making it easier to identify relevant partnerships. Within the institution the repository can help identify the key players in emerging strategic research areas, leading to early formation of new cutting-edge communities. These key players maybe uniquely placed to bring together different discipline cultures into the new community. Hislop (2005) identifies this broker role, “someone who inhabits both communities, and uses their knowledge and understanding of both to facilitate the development of mutual understanding between the communities”.²

New semantic technologies can add value to repository services through such expert-identifier services, end-user mash-up tools and web 2.0 social network support. Repositories are part of an environment where virtual

² Hislop, D. (2005) Knowledge Management in Organizations: a Critical Introduction. OUP: Oxford, p. 82.

services complement face to face communities, at home institutions and conferences. Repositories need to link to developing virtual and physical research environments so publications are not static, but re-presented in different contexts, commented on, versions updated, re-purposed. There needs to be a shift from repositories as storage containers for documents that we throw open to Google, to active contributors to the social and technical fibre of communities of practice.

The JISC funded KULTUR project³ found that when a demo creative arts repository was split into repositories for the three partner institutions there was disappointment from the user community who had valued the shared experience. It was suggested that the institutional repositories should have a collaborative presentation layer to add-value to the social and networking function of the repositories.

Structural change leading cultural change

Repositories can also act as a catalyst in the changing technical infrastructure and cultural environment. One approach is to make structural changes which can then lead to deeper cultural change. Firestone and McElroy (2003) argue that “structural changes can align individual motivational/incentive systems, whether of individual or cultural origin, with organizational incentive systems to affect behavioral changes without cultural change. In fact, in social systems, behavioral and structural changes frequently precede and cause cultural changes”.⁴ Examples of such changes could be developing reward and appraisal systems that “make the importance of sharing knowledge visible”⁵ (McDermott and O’Dell, 2001) which means using the repository as the source of information for formal appraisal and promotion procedures (Suber, 2007).⁶ This is now the case for some disciplines at Southampton and a University wide roll out is being discussed. Minho has made use of financial incentives to deposit.⁷

Research assessment requirements have also led to a review of the technical infrastructure to support research activity. The move towards the inclusion of metrics, plus the increasing complexity of funding requirements has increased the demand for granular reports on research activity which includes bibliographic, financial and esteem information by combination of many different staff/postgraduate groups which could be project based and fluid in nature. Repositories are part of a technical landscape with HR, finance, student records and other research systems. Repositories have a lot to offer the integrated institutional research structure. The fruits of research are the institution’s harvest bounty, but they are not just outputs, they are an integral

³ The KULTUR project is collaborative between the University of Southampton, University of the Arts and University for the Creative Arts. Project website <http://kultur.eprints.org/index.htm> [accessed 3 Feb, 2009]

⁴ Firestone, J. and McElroy, M. (2003) Key Issues in the New Knowledge Management. KMCI Press, Butterworth/Heinmann: London, p 264.

⁵ McDermott, R. and O’Dell, C. (2001) “Overcoming cultural barriers to knowledge sharing”, Journal of Knowledge Management, (5)1, p81.

⁶ Suber, P. (2007) Creating an Intellectual Commons through Open Access, in Hess, C. and Ostrom, E., Understanding Knowledge as Commons: From Theory to Practice, MIT: Cambs, Mass. p. 192.

⁷ Proudman, V. (2007) The population of repositories, in Weenink K, Waaijers, L. and van Godtsenhoven, K. Eds. , *A DRIVER's Guide to European Repositories*, Amsterdam: Amsterdam University Press. P 54. <http://dare.uva.nl/aup/nl/record/260224> [accessed 2 February, 2009]

part of the knowledge cycle. Technical integration and flexible reporting allows the business process to be end-user focussed and draw information together to improve the quality of decision making. This includes feeding back outcomes effectively to identify new research collaborations, supporting innovative organic activity, and providing an overall framework for quality assurance.

Trust

This framework of quality assurance is strongly linked to trust which is one of the cornerstones of a successful knowledge management process. If repositories are to play an integral role in KM they need to be part of a trusted environment. IPR and copyright complexity is a much discussed area and if repositories are to be successful they must take into account user-perceptions of this issue not just the legal bottom-line. Support for IPR and copyright needs to be part of an institution wide approach to research support, from bids and contracts through to repository deposit and digitization programmes. Repositories are not just about journal information on the ROMEo service⁸, which users find complex enough, but about copyright clearance queries, risks to future publication opportunities, complex embargo needs to cover third party copyright material. This is not an area to shy away from if we want to improve the trust environment. We need to develop expertise so the repository user requirements are supported effectively and transparently as part of the whole research process.

Repository management is knowledge management

Assessing the role of the repository in the context of knowledge management processes helps identify some of the types of services that we need to develop in order to be successful. Institutional repositories of all kinds are still developing content and growing into institutional roles. Some of the “next generation” developments may be quite resource intensive, but these are not just repository developments. They are about the overarching institutional infrastructure and should be categorized as such when it comes to investment decisions. This is where repository managers truly become knowledge managers, presenting a picture of the role of repositories in the institutional knowledge-processes. Often repository managers are library staff and in many institutions the library is in a strong position to draw relevant people together, with strong service links to both the academic community and fellow service providers. As Lougee (2007) suggests, “the library is called on to comprehend and engage the needs of a community, knitting together content, technology, tools and people”.⁹ The library is called to lead as knowledge managers.

If accepted, this proposed paper will further explore these themes by mapping to any relevant research activity, case studies and projects.

⁸ SHERPA ROMEo Publisher Copyright Policies and Self-archiving, <http://www.sherpa.ac.uk/romeo/> [accessed 2 February, 2009]

⁹ Lougee, W. (2007) Scholarly communication and the libraries unbound: the opportunity of the commons, in Hess, C, and Ostrom, E., *Understanding Knowledge as Commons: From Theory to Practice*, MIT: Cambs, Mass. p. 327.